

IN THE CLAIMS

1. (currently amended) A method for the determination of triglyceride individual molecular species composition of matter in a biological sample comprising:

subjecting the biological sample to lipid extraction to obtain a lipid extract;

subjecting the lipid extract to two dimensional electrospray ionization tandem mass spectrometry (ESI/MS/MS)[[;]] to generate a two dimensional plot representing molecular ions of the lipid extract on an x-axis and neutral loss scans of fatty acids of the lipid extract on a y-axis; and

determining a sensitivity of the molecular species; and

applying a correction factor to the sensitivity to produce the determination, wherein the correction factor is determined using a least square regressive non-linear curve fitting.

comparing peak heights for the molecular ions with that for an internal standard to identify and/or quantify the triglyceride molecular species.

2. (original) A method in accordance with Claim 1 wherein the lipid extraction is a chloroform lipid extraction.

3. (currently amended) A method in accordance with Claim 2 Claim 1 wherein said biological sample includes at least one blood, serum, a tissue biopsy, feces, and urine.

4. (currently amended) A method in accordance with Claim 3 Claim 1 wherein said biological sample is one of a mammalian tissue and a plant tissue.

5. (original) A method in accordance with Claim 4 wherein the mammalian tissue is human tissue.

6. (currently amended) A method in accordance with Claim 5 wherein the determination comprises a finger print Claim 1 further comprising determining a fingerprint profile of a patient's triglyceride molecular species.

7. (currently amended) A method in accordance with Claim 6 wherein said ~~finger print fingerprint profile~~ represents the individual molecular species of a triglyceride composition of matter.

8. (currently amended) A method for the determination of triglyceride individual molecular species composition of matter directly from a lipid extract of a biological sample comprising:

subjecting said lipid extract to electrospray ionization tandem mass spectrometry (ESI/MS/MS)[[;]] to generate a two dimensional plot of molecular ions of the lipid extract versus neutral loss scans of fatty acids of the lipid extract; and

~~determining a sensitivity of the molecular species; and~~

~~applying a correction factor to the sensitivity to produce the determination, wherein the correction factor is determined using a least square regressive non-linear curve fitting.~~

comparing peak heights for the molecular ions with that for an internal standard to identify and/or quantify the triglyceride molecular species.

9. (currently amended) A method in accordance with Claim 8 wherein said lipid ~~extraction~~ extract is obtained via a chloroform extraction.

10. (previously presented) A method in accordance with Claim 8 wherein said biological sample is one of a mammalian or a plant tissue.

11. (original) A method in accordance with Claim 10 wherein said mammalian tissue is human tissue.

12. (currently amended) A method in accordance with ~~Claim 11~~ Claim 8 wherein the biological sample is an aqueous human fluid sample subjected to at least one of centrifugation ~~and/or~~ and conventional column chromatography suitable for separation of lipoproteins to resolve triglyceride into different lipoproteins.

13. (currently amended) A method in accordance with Claim 11 Claim 12 wherein the aqueous human fluid sample is selected from the group consisting of whole blood, blood serum, blood plasma, liver and urine.

14. (original) A method in accordance with Claim 13 wherein the lipid extract is obtained by extraction of said biological sample with chloroform.

15. (currently amended) A method in accordance with Claim 14 wherein the triglyceride molecular species of the biological sample are determined by comparison with the triglyceride molecular species of a standard Claim 8 wherein said internal standard includes a control sample of triglyceride molecular species.

16. (currently amended) A method in accordance with Claim 15 wherein the triacylglyceride molecular species of the biological sample are determined by comparisons of their ion peak intensities with the ion peak intensities of a standard control sample and iteratively deconvoluted and optionally normalized Claim 8 further comprising iteratively deconvoluting and optionally normalizing the peak heights for the molecular ions.

17. (currently amended) A method in accordance with Claim 16 wherein said determination includes deconvolution of the intensity Claim 8 further comprising deconvoluting two dimensional intercept contours of the triglycerides at their neutral loss products neutral loss scans.

18-48. (canceled)